

ADAPTABLE ELECTRICAL WORKSTATION MODULE

Cross Reference to Related Applications

This is a non-provisional application based upon U.S. provisional patent application
5 serial no. 60/418,529, entitled "ADAPTABLE WORK SURFACE MODULE", filed October 15,
2002.

BACKGROUND OF THE INVENTION

1. Field of the invention.

The present invention relates to electrical workstation modules that provide modular
10 electrical components, and, more particularly, to electrical workstation modules that provide
modular electrical components and that can be adapted to an existing workstation without
changing the configuration of the workstation.

2. Description of the related art.

Efficient organization of devices requiring electrical power within an office, commercial,
15 industrial or residential environment has been exacerbated by the proliferation of additional
devices for lighting, communications such as complex telephone stations, modems and facsimile
machines, computers and computer peripherals such as video displays, printers and the like. A
primary problem associated with the efficient organization and use of such devices relate to the
abundance of communication and power wiring arrays and the positioning thereof within a
20 workstation environment.

Telephone terminals and electrical receptacles have long been used for providing
convenient, floor-level interconnection nodes for connecting telephones, computers and other
electrical devices to the communications, data networks and electrical networks. These types of
communications and electrical networks have proliferated particularly with the advances in
25 communications, computers and related equipment. Many commercial, industrial, educational

and residential environments now have a variety of communication networks. Many of the networks are internal and many are connected to external networks, such as telephone lines. These networks now include dedicated communication lines, video communications, computer networks, and fiber optics communication lines for various types of information.

5 A long-standing problem has been the efficient interconnection of these communications networks with the end use devices, such as telephones and computers. This is especially difficult in an office environment where it is desirable to eliminate tangled wiring arrays for both aesthetic and safety reasons. Many offices have numerous wires running from each desk to wall-mounted data terminals for telephone, computer and other information and communication
10 networks.

 The problem of tangled wires in the office environment is even more pronounced when electrical power wiring is added to the tangle of communications wires. Wiring costs can be relatively high if a sufficient number of terminals and receptacles are not utilized and properly positioned. However, the cost of the materials also rapidly increases as the number of receptacles
15 is increased. In addition, and perhaps more importantly, the conventional design of terminals within wall or floor services, which are often a substantial distance from devices such as those employed on work surfaces (computer terminals, etc.), can cause relatively unsightly and sometimes dangerous wiring arrays, in addition to resultant entanglements of cords connected to these devices.

20 Another problem is that existing communications and power receptacles may not be available as electrical and electronic devices are added, simply due to all available existing receptacles being used.

 Outlet assemblies are known that provide electrical and communication outlets, however, such assemblies are limited to a single mounting method respective to the workstation.

Other assemblies are known that provide electrical and communication outlets and which clamp to a worksurface, however, such assemblies are limited to a single mounting method respective to the workstation and also have a fixed bracket requiring a movable clamping device which is mounted on the underneath of the worksurface. Such a clamping device underneath of the worksurface is inconvenient due to possible bumping of knees, legs, etc. Further, such mounting is typically unattractive. Known clamping devices are typically threaded elements with a fairly small surface area in contact with the worksurface and are prone to damaging the worksurface when overtightened, or even moderately tightened.

What is needed in the art is an electrical workstation module that is mountable to a variety of workstation environments and in a variety of mounting methods, that does not obstruct ingress or egress respective to a person using a workstation, that does not damage the worksurface and that is aesthetically appealing, while providing access to modular electrical components, such as receptacles, conveniently.

SUMMARY OF THE INVENTION

The present invention provides an adaptable electrical workstation module with a movable bracket.

The invention comprises, in one form thereof, a workstation assembly, comprising: a worksurface having opposite sides and an electrical workstation module. The electrical workstation module includes a housing with a mounting surface adjacent one side of the worksurface, at least one modular electrical component carried by the housing, an adjustment element connected to the housing and a bracket connected with the adjustment element. The bracket has a compressive surface adjacent an other side of the worksurface and that faces the mounting surface. The compressive surface is movable in directions toward and away from the mounting surface using the adjustment element.

An advantage of the present invention is an electrical workstation module that is mountable to a variety of worksurface environments.

Another advantage of the present invention is an electrical workstation module that is mountable in a variety of mounting methods.

5 Yet another advantage of the present invention is an electrical workstation module that does not obstruct ingress or egress respective to a person using a workstation.

A further advantage of the present invention is an electrical workstation module that is aesthetically appealing.

A further advantage of the present invention is an electrical workstation module that is
10 mountable on a table edge where the edge is essentially square, or on a table edge that has a sloped upper surface typically called a waterfall edge or associated with a cutout in a worksurface.

A further advantage of the present invention is an electrical workstation module, when mounted, that has no hardware exposed under the table.

15 A further advantage of the present invention is an electrical workstation module which is easier to secure to a worksurface with the tightening knob located above the worksurface and therefore easily accessible.

A further advantage of the present invention is an electrical workstation module that can be mounted to a slotted rail.

20 A further advantage of the present invention is an electrical workstation module that can be mounted to a perforated rail.

A further advantage of the present invention is an electrical workstation module that does not damage the worksurface.

A further advantage of the present invention is an electrical workstation module that provides convenient access to modular electrical components such as receptacles.

BRIEF DESCRIPTION OF THE DRAWINGS

The above-mentioned and other features and advantages of this invention, and the
5 manner of attaining them, will become more apparent and the invention will be better understood
by reference to the following description of embodiments of the invention taken in conjunction
with the accompanying drawings, wherein:

Fig. 1 is an exploded perspective view of an embodiment of a worksurface module of the
present invention;

10 Fig. 2 is a perspective assembled view of the module of the present invention shown in a
slotted mounting;

Fig. 3 is a side view of an embodiment of a bracket of the present invention as would be
used in Fig. 2;

15 Fig. 4 is a perspective view of the module of Fig. 1 shown mounted on a worksurface that
has an abrupt edge;

Fig. 5 is a perspective view of the module of Fig. 1 shown mounted on a worksurface that
has a waterfall edge;

Fig. 6 is a side view of the module of Fig. 1 shown mounted on a worksurface that has a
waterfall edge (hidden line) or an abrupt edge (solid line);

20 Fig. 7 is a perspective assembled view of the module of Fig. 1 shown mounted on a
worksurface in a through hole in the worksurface;

Fig. 8 is a front view of the present invention showing two modules, each mounted in
apertures in a perforated slot;

Fig. 9 is a top view of Fig. 8; and

Fig. 10 is a perspective view of an embodiment of the bracket of the present invention as would be used in Fig. 8.

Corresponding reference characters indicate corresponding parts throughout the several views. The exemplifications set out herein illustrate one preferred embodiment of the invention,
5 in one form, and such exemplifications are not to be construed as limiting the scope of the invention in any manner.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, and more particularly to Figs. 1 and 7, there is shown workstation assembly 20 which generally includes through hole 21 in worksurface 22 and
10 electrical workstation module 24. Worksurface 22 has opposite sides 22A and 22B

Electrical workstation module 24 includes housing 26 with mounting surface 27 adjacent side 22A. Housing 26 carries at least one modular electrical component such as power receptacle 28, data receptacle 30 and telephone receptacle 32. Electrical connection can be made to electrical workstation module 24 by cable connection such as power cable 34. Telephone and
15 data cables can be connected to corresponding receptacles through aperture 36. Electrical workstation module 24 can include cover 38 that protects internal connections and provides an aesthetic look, and that alternatively can be part of housing 26. Electrical workstation module 24 further includes adjustment element 40 connected to movable bracket 42 and shaped slot 44. Shaped slot 44 includes collar 46 with collar top side 48 and collar bottom side 50.

20 Adjustment element 40 includes knob 52 connected to threaded element 54 that is connected to flange 56. When adjustment element 40 is assembled with housing 26, knob 52 rests on collar top side 48. Slot collar 46 is interposed between knob 52 and flange 56 thereby allowing rotation of adjustment element 40 while restricting translation thereof.

Movable bracket 42 includes shaped segment 58 having threaded hole 60 therein.

Compressive segment 62 is opposed from and connected to shaped segment 58. Compressive segment 62 includes compressive surface 63 adjacent side 22B. Shaped segment 58 can be complimentary in shape to shaped slot 44. When assembled, shaped segment 58 is disposed
5 within shaped slot 44 and threaded onto threaded element 54. When mounted, worksurface 22 is between the mounting surface 27 and compressive segment 62. Rotation of knob 52 adjusts movable bracket 42 in shaped slot 44 allowing electrical workstation module 24 to adapt to a variety of worksurfaces.

For example, workstation assembly 68 (Fig. 5) has electrical workstation module 24
10 adapted to waterfall edge 69 on worksurface 70 with opposite sides 70A and 70B. Workstation assembly 72 (Fig. 7) has electrical workstation module 24 adapted to abrupt edge 73 on worksurface 74 with opposite sides 74A and 74B. Workstation assembly 76 (Fig. 2) has electrical workstation module 24 adapted to slot 77 on worksurface 78 with opposite sides 77A and 77B. Slotted worksurface 78 requires bracket 80 (Fig. 3) with compressive segment 82 that
15 has compressive surface 83. Workstation assembly 84 (Fig. 8) has electrical workstation module 24 (two are shown) adapted to slots 85 on worksurface 86 with perforations 87 and with opposite sides 85A and 85B. Slotted worksurface 86 requires bracket 88 (Fig. 10) with compressive segment 90 that has compressive surface 91.

In use, worksurface 22 is interposed between the bottom of electrical workstation module
20 24 and compressive surface 63. Knob 52 is rotated and hence movable bracket is moved relative to housing 26, which adjusts electrical workstation module 24 relative to worksurface 22. In order to hold electrical workstation module 24 stationary with respect to worksurface 22, at least a portion of worksurface 22 is compressed between movable bracket 42 and housing 26.

Electrical workstation module 24 is adapted to at least one of an edge mounting, a through hole mounting and a slotted mounting.

While this invention has been described as having a preferred design, the present invention can be further modified within the spirit and scope of this disclosure. This application
5 is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles. Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.